

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
2 September 2004 (02.09.2004)

PCT

(10) International Publication Number  
**WO 2004/074549 A2**

- (51) International Patent Classification<sup>7</sup>: C25C
- (21) International Application Number:  
PCT/IB2004/000431
- (22) International Filing Date: 18 February 2004 (18.02.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
PCT/IB03/00662 20 February 2003 (20.02.2003) IB
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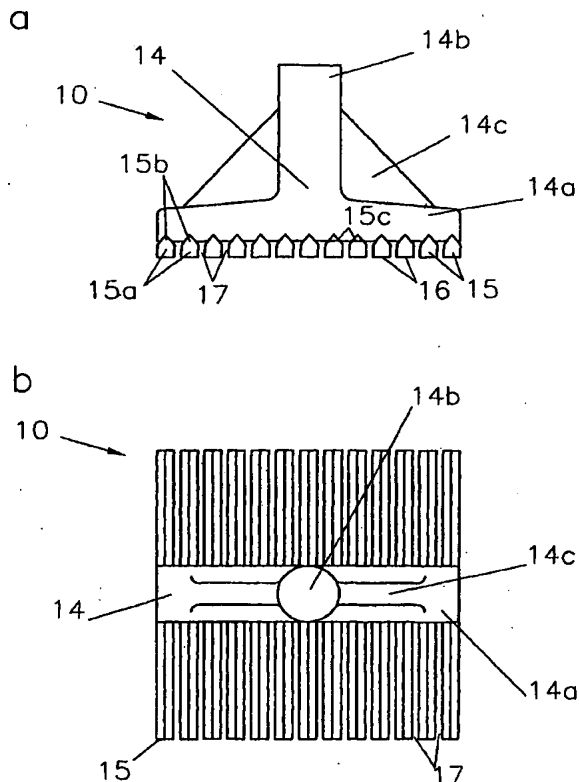
(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

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(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: ALUMINIUM ELECTROWINNING CELLS WITH METAL-BASED ANODES



(57) Abstract: A cell for the electrowinning of aluminium comprises a metal-based anode (10) containing at least one of nickel, cobalt and iron. The anode (10) may be covered with an applied or an integral hematite-based layer and/or a cerium oxyfluoride-based outermost coating. The cell contains a fluoride-containing molten electrolyte (5) at a temperature below 950°C, in which the anode (10) is immersed and which consists of: 6.5 to 11 weight% dissolved alumina; 35 to 44 weight% aluminium fluoride; 38 to 46 weight% sodium fluoride; 2 to 15 weight% potassium fluoride; 0 to 5 weight% calcium fluoride; and 0 to 5 weight% in total of one or more further constituents. An anode stem (14b) containing nickel and/or iron can be used to suspend the anode (10) in the electrolyte (5) facing a cathode (21,21A,25) that has an aluminium-wettable surface (20), in particular a drained horizontal or inclined surface.

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Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**

— of inventorship (Rule 4.17(iv)) for US only

**Published:**

— without international search report and to be republished upon receipt of that report

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